

# Spring Pheasant Surveys 2006

by Andrea Mezera

## **Abstract**

Survey results indicate that pheasant numbers decreased slightly from 2005 to 2006. Fifty-three crowing rooster pheasant surveys were conducted this past spring to monitor pheasant population trends throughout Wisconsin's pheasant management counties. In addition to an estimation of populations, these surveys also provide evaluation of wild pheasant restoration projects, including Iowa and Jilin F1 release areas, the Dodge County Private Lands Project, the Glacial Habitat Restoration Area and various cooperative habitat projects using Pheasant Stamp, Wings Over Wisconsin, and Pheasants Forever funds. The 2006 pheasant crowing counts indicate a statewide average of approximately 2.9 roosters per mile<sup>2</sup>, a 10% decrease from the 2005 average of 3.2 roosters per mile<sup>2</sup>.

## **Methods**

**Sex Ratio Surveys**--Winter sex ratios were used to extrapolate hen densities from spring crowing rooster counts. In past years, observers searched winter concentration areas and recorded the number of roosters and hens seen in order to develop area-specific sex ratios. New pheasant sex ratios were calculated for St. Croix, Green, Rock and Iowa Counties in 2004. Unfortunately, due to budget and personnel constraints, pheasant flushing surveys have not been conducted in a select number of counties for several years. For the remainder of 2004 and 2006 data, the sex ratio was assumed to be the long-term Dodge County Project average of 2.5 hens/rooster.

**Crowing Cock Surveys**--Spring pheasant surveys were conducted during April and May. Observers initiated their transects approximately 45 minutes before sunrise and usually finished within 1-1.5 hours after sunrise. Observers listened for 3 minutes at stops 0.5 miles apart along the transects and marked locations of crowing roosters on field maps. Surveys were only conducted when winds were less than 10 miles per hour. Throughout the Dodge County Project area, the GHRA and the GHRA control area, the mean of two counts was used to achieve the roosters per mile<sup>2</sup> index. In the other areas, surveys were run twice and the higher of the two counts are used for comparison. On a few routes, a crowing survey was conducted only once. Survey routes that were not conducted this year were eliminated from the statistical analysis process.

## **Results**

Overall, 2006 surveys indicate a decrease in rooster density with a state survey mean of 2.9 roosters per mile<sup>2</sup> compared to 3.2 roosters per mile<sup>2</sup> in 2005. Of the 53 crowing cock surveys run, only 49 were used in the 2006 totals because of incomplete survey information. Of the routes run, 53% increased (n=26), 39% (n=19) declined and 8% (n=4) showed no change when compared to the 2005 counts.

**Dodge County Project**--The Dodge County Project was initiated in 1984 to evaluate the effectiveness of private land habitat management and development in areas that have satisfactory winter cover and remnant pheasant populations. Nesting cover and food plots were developed in a two-mile radius around six different major pheasant wintering areas. Although the management phase of this project concluded in 1994, surveys continue to be conducted to monitor pheasant populations.

Spring surveys indicated an overall 9% population decrease in the 5 Dodge County survey areas. The 2006 hen index data indicates that hen densities are above the long-term average for Dodge County, with this year's index at 8.1 hens/mile<sup>2</sup> and the long-term average at 6.3 hens/mile<sup>2</sup> (Figure 1).

**Glacial Habitat Restoration Area--** The Glacial Habitat Restoration Area (GHRA) is a habitat improvement program initiated in 1990 focused on purchasing, easing, and improving wildlife habitat through scattered parcels of property in 24 townships in parts of Winnebago, Fond du Lac, Dodge, and Columbia Counties. Wetland and grassland restoration projects focused on improving habitat for pheasants and other upland and wetland wildlife species are conducted throughout the project area. The goal of the project is to restore 11,000 acres of drained wetlands and 38,000 acres of grasslands within the area's boundaries. With increased cuts in personnel and management dollars throughout the project area, an increased backlog of properties requiring upland conversion and wetland restoration has developed.

The department's wildlife program is continuing to invest pheasant stamp funds as well as federal NAWCA grant dollars in the GHRA to further habitat development work in these areas. Population indices on the GHRA surveyed areas averaged 11% lower than in 2005, with a range for individual surveys from 0.4 to 4.4 roosters per mile<sup>2</sup> (Table 1).

The 2006 hen index data indicates that hen numbers are above the long-term average for the Glacial Habitat Restoration Area, with this year's index at 6.0 hens/mile<sup>2</sup> and the long-term average at 4.8 hens/mile<sup>2</sup> (Figure 2).

**GHRA Control Areas--** GHRA control area surveys are conducted in order to compare pheasant numbers where active management under the Habitat Restoration Area Program is not occurring. The number of roosters per mile<sup>2</sup> decreased in these units by 8% to 2.4 roosters per mile<sup>2</sup>, over the 2005 average of 2.6 roosters per mile<sup>2</sup> (Table 1). The mean hen index in the GHRA Control Area is 6.0 hens/mile<sup>2</sup> this is a 6% decrease from 6.4 hens/mile<sup>2</sup> in 2005 (Figure 3).

**Other Control Areas--** In order to effectively evaluate the Iowa and Jilin F1 projects, department personnel in conjunction with Wings Over Wisconsin and Pheasants Forever members ran surveys on control areas in St. Croix, Rock, Jefferson, and Polk counties. These areas have generally had recent habitat improvements due to CRP or pheasant stamp projects, but they have not received wild bird releases. The number of roosters per mile<sup>2</sup> decreased in these units 12% to 3.8 roosters per mile<sup>2</sup> (Table 1). The mean hen index in these survey routes is 13.4 hens/mile<sup>2</sup> this is a 7% increase from 12.5 hens/mile<sup>2</sup> in 2005 (Figure 4).

**Iowa Pheasant Release Area--** The average number of roosters per mile<sup>2</sup> in the Iowa Pheasant Release Area decreased 14% compared to the 2005 average of 2.9 roosters per mile<sup>2</sup> (Table 1). Due to incomplete surveys, not all routes were considered in calculating the totals. When making a comparative analysis, this fact must be considered. The 2005 hen index data indicates that hen numbers are above the long-term average for the Iowa Pheasant Release Areas, with this year's index at 7.1 hens/mile<sup>2</sup> and the long-term average at 5.6 hens/mile<sup>2</sup> (Figure 5).

**Jilin (Manchurian) Pheasant Release Areas--** The number of roosters per mile<sup>2</sup> decreased 3% in the Jilin Pheasant Release Area (2.9 roosters per mile<sup>2</sup>, down from the 2005 average of 3.0 roosters per mile<sup>2</sup> (Table 1). The number of roosters per mile<sup>2</sup> ranged from 0.4 in the Manitowoc-2 Rivers/2 Creeks areas to 5.7 in the Green Lake-Markesan release area.

The 2006 hen index data indicates that hen numbers are above the long-term average for the Jilin Pheasant Release Areas, with this year's index at 7.3 hens/mile<sup>2</sup> and the long-term average at 6.7 hens/mile<sup>2</sup> (Figure 6).

## **Discussion**

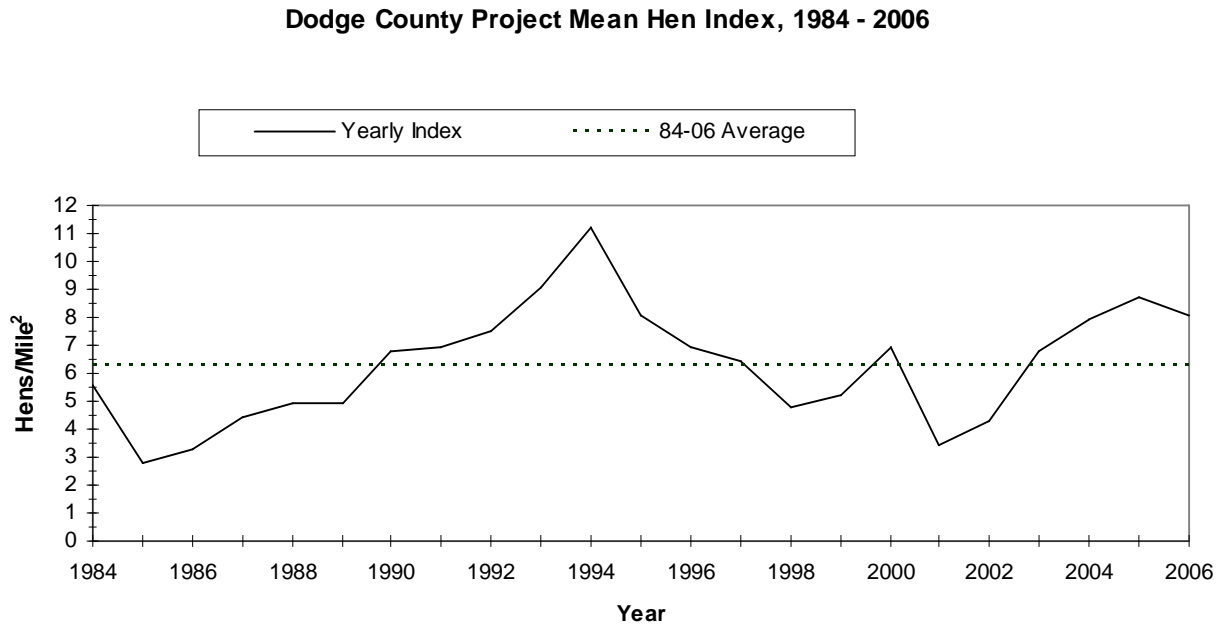
Survey results indicate that pheasant numbers decreased slightly from 2005 to 2006. The 2006 pheasant crowing counts indicate a statewide average of approximately 2.9 roosters per mile<sup>2</sup>, a 10% decrease from 2005. Scattered population changes typically cannot be pinpointed to one cause; however, some effects may include isolated weather conditions, land use changes, or crowing count survey or surveyor discrepancies.

Throughout much of the state, winter temperatures (2005-2006) were above average and most areas had near normal precipitation levels. Data gathered from the 10-week brood surveys should give a better indication of 2006 production. Past research from Wisconsin has shown that weather during prenesting is the biggest factor in year-to-year population fluctuation.

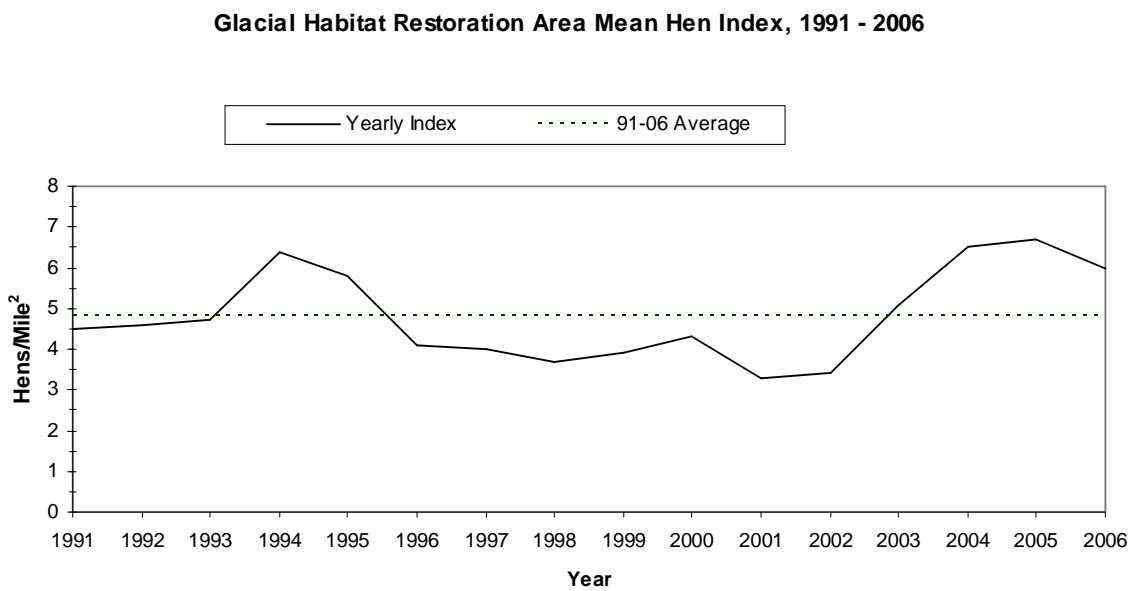
Although survey information is published yearly, it is important to remember that **long-term trends** and comparison to **long term averages** are more valuable than year-to-year or area-to-area comparisons. Each year, the surveys are conducted by different individuals. These surveyors may not have the same experience as another and may not hear all of the crowing roosters or may “double-count” some roosters. However, long-term annual index changes for many areas with a similar treatment should provide good indications of the direction of population trends for these treatment areas. The long-term trend in pheasant populations currently looks positive relative to the 1980's with a statewide hen index of 8.0 hens/mile<sup>2</sup> in 2006 and a long-term average of 5.9 hens/mile<sup>2</sup>. Continued emphasis is needed on research, habitat development, management, and maintenance to ensure stable pheasant populations in the future.

**Table 1. Relative change in 2006 pheasant crowing cock densities and hen indices relative to 2005 results.**

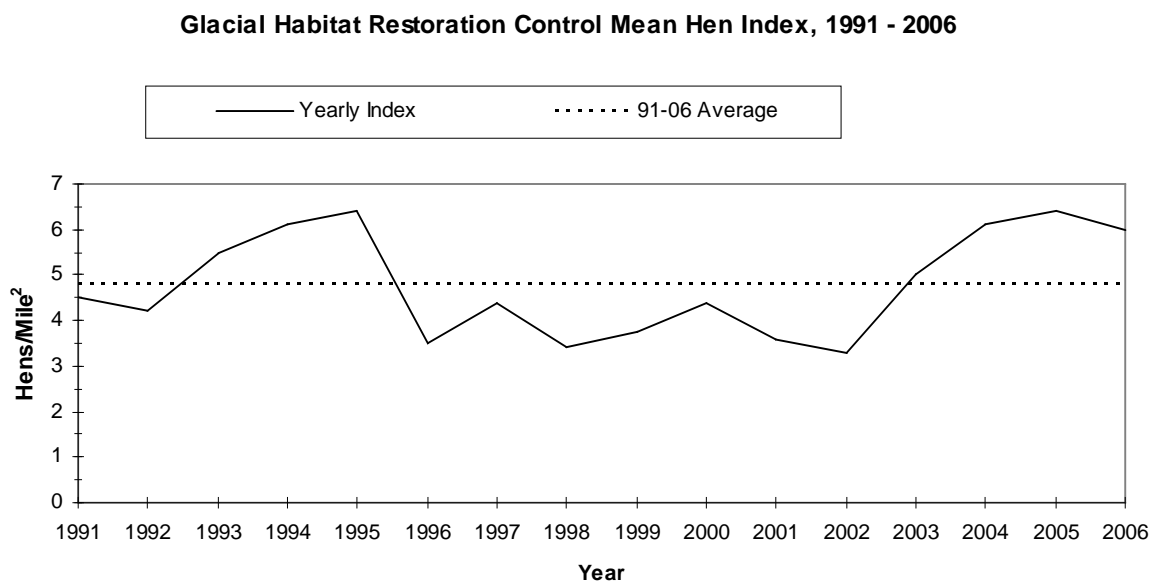
| Project                         | Unit                        | Method      | Roosters per<br>sq.mi-'05 | Roosters per<br>sq.mi-'06 | % Change for<br>Roosters | Hens/<br>Cock | Hen Index<br>'05 | Hen Index<br>'06 | % Change for<br>Hens |
|---------------------------------|-----------------------------|-------------|---------------------------|---------------------------|--------------------------|---------------|------------------|------------------|----------------------|
| <b><u>Dodge County</u></b>      |                             |             |                           |                           |                          |               |                  |                  |                      |
|                                 | Elba                        | Mean 2 cts. | 2.9                       | 3.1                       | 7%                       | 2.5           | 7.3              | 7.8              | 7%                   |
|                                 | Calamus                     | Mean 2 cts. | 4.1                       | 2.8                       | -32%                     | 2.5           | 10.3             | 7.0              | -32%                 |
|                                 | Trenton                     | Mean 2 cts. | 2.9                       | n/a                       | n/a                      | 2.5           | 7.3              | n/a              | n/a                  |
|                                 | Clyman                      | Mean 2 cts. | 4.0                       | 2.7                       | -33%                     | 2.5           | 10.0             | 6.8              | -32%                 |
|                                 | Fountain Prairie            | Mean 2 cts. | 3.5                       | 4.3                       | 23%                      | 2.5           | 8.8              | 10.8             | 23%                  |
| <b>Dodge Co. Mean</b>           |                             |             | <b>3.5</b>                | <b>3.2</b>                | <b>-9%</b>               |               | <b>8.7</b>       | <b>8.1</b>       | <b>-7%</b>           |
| <b><u>GHRA</u></b>              |                             |             |                           |                           |                          |               |                  |                  |                      |
|                                 | Winnebago-Pumpkinseed       | Mean 2 cts. | 0.6                       | 0.9                       | 50%                      | 2.5           | 1.5              | 2.3              | 50%                  |
|                                 | Winnebago-Waukau            | Mean 2 cts. | 0.2                       | 0.4                       | 100%                     | 2.5           | 0.5              | 1.0              | 100%                 |
|                                 | Winnebago-Pickett           | Mean 2 cts. | 2.1                       | 1.7                       | -19%                     | 2.5           | 5.3              | 4.3              | -19%                 |
|                                 | Fond du Lac-Ripon           | Mean 2 cts. | 2.9                       | 1.7                       | -41%                     | 2.5           | 7.3              | 4.3              | -41%                 |
|                                 | Fond du Lac-Rosendale Cntr. | Mean 2 cts. | 2.9                       | 1.8                       | -38%                     | 2.5           | 7.3              | 4.5              | -38%                 |
|                                 | Fond du Lac-Silver Creek    | Mean 2 cts. | 4.5                       | 3.0                       | -33%                     | 2.5           | 11.3             | 7.5              | -34%                 |
|                                 | Fond du Lac-Eldorado        | Mean 2 cts. | 4.7                       | 3.4                       | -28%                     | 2.5           | 11.8             | 8.5              | -28%                 |
|                                 | Fond du Lac-Ladoga          | Mean 2 cts. | 3.9                       | 3.9                       | 0%                       | 2.5           | 9.8              | 9.8              | 0%                   |
|                                 | Dodge-Alto                  | Mean 2 cts. | 1.6                       | 1.8                       | 13%                      | 2.5           | 4.0              | 4.5              | 13%                  |
|                                 | Dodge-Fox Lake              | Mean 2 cts. | 2.3                       | 2.3                       | 0%                       | 2.5           | 5.8              | 5.8              | 0%                   |
|                                 | Dodge-Randolph              | Mean 2 cts. | 1.8                       | 1.9                       | 6%                       | 2.5           | 4.5              | 4.8              | 7%                   |
|                                 | Columbia-Courtland          | Mean 2 cts. | 3.5                       | 3.8                       | 9%                       | 2.5           | 8.8              | 9.5              | 8%                   |
|                                 | Columbia-Fountain Prairie   | Mean 2 cts. | 3.8                       | 4.4                       | 16%                      | 2.5           | 9.5              | 11.0             | 16%                  |
| <b>GHRA Mean</b>                |                             |             | <b>2.7</b>                | <b>2.4</b>                | <b>-11%</b>              |               | <b>6.7</b>       | <b>6.0</b>       | <b>-11%</b>          |
| <b><u>GHRA Controls</u></b>     |                             |             |                           |                           |                          |               |                  |                  |                      |
|                                 | Columbia-Otsego             | Mean 2 cts. | 2.3                       | 2.8                       | 22%                      | 2.5           | 5.8              | 7.0              | 21%                  |
|                                 | Columbia-Hampden            | Mean 2 cts. | 3.8                       | 2.9                       | -24%                     | 2.5           | 9.5              | 7.3              | -23%                 |
|                                 | Columbia-Lebanon            | Mean 2 cts. | 1.7                       | 1.9                       | 12%                      | 2.5           | 4.3              | 4.8              | 12%                  |
|                                 | Green Lake-Puckyan          | Mean 2 cts. | 2.3                       | 2.1                       | -9%                      | 2.5           | 5.8              | 5.3              | -9%                  |
|                                 | Dodge-Ashippun              | Mean 2 cts. | 0.7                       | 1.3                       | 86%                      | 2.5           | 1.8              | 3.3              | 83%                  |
|                                 | Dodge-Clyman                | Mean 2 cts. | 4.0                       | 2.7                       | -33%                     | 2.5           | 10.0             | 6.8              | -32%                 |
|                                 | Dodge-Elba                  | Mean 2 cts. | 3.1                       | 3.1                       | 0%                       | 2.5           | 7.8              | 7.8              | 0%                   |
| <b>GHRA Control Mean</b>        |                             |             | <b>2.6</b>                | <b>2.4</b>                | <b>-8%</b>               |               | <b>6.4</b>       | <b>6.0</b>       | <b>-6%</b>           |
| <b><u>Other Controls</u></b>    |                             |             |                           |                           |                          |               |                  |                  |                      |
|                                 | St. Croix-New Richmond      | 2 cts/ 1 wy | 2.8                       | 3.9                       | 39%                      | 2.4           | 6.7              | 9.4              | 39%                  |
|                                 | Rock-West Beloit            | 2 cts/ 1 wy | 3.2                       | 5.1                       | 59%                      | 4.9           | 15.7             | 25.0             | 59%                  |
|                                 | Jefferson-Oakland           | 2 cts/ 1 wy | 1.9                       | 2.3                       | 21%                      | 2.5           | 4.8              | 5.8              | 21%                  |
|                                 | Polk                        | 2 cts/ 1 wy | 9.2                       | n/a                       | n/a                      | 2.5           | 23.0             | n/a              | n/a                  |
| <b>Other Controls Mean</b>      |                             |             | <b>4.3</b>                | <b>3.8</b>                | <b>-12%</b>              |               | <b>12.5</b>      | <b>13.4</b>      | <b>7%</b>            |
| <b><u>Iowa F1 Releases</u></b>  |                             |             |                           |                           |                          |               |                  |                  |                      |
| 88-90                           | Rock/Dane - Union Township  | 2 cts/ 1 wy | 0.4                       | 0.5                       | 25%                      | 4.9           | 2.0              | 2.5              | 25%                  |
| 88-90                           | Iowa - Western              | 2 cts/ 1 wy | 4.0                       | 2.1                       | -48%                     | 3.9           | 15.6             | 8.2              | -48%                 |
| 91-92                           | Green-North Monroe          | 2 cts/ 1 wy | 11.5                      | 6.0                       | -48%                     | 3.8           | 43.7             | 22.8             | -48%                 |
| 91-93                           | St. Croix-Boardman          | 2 cts/ 1 wy | 2.9                       | 3.5                       | 21%                      | 2.4           | 7.0              | 8.4              | 21%                  |
| 94-96                           | Manitowoc-Collins           | 2 cts/ 1 wy | 1.8                       | 3.3                       | 83%                      | 2.5           | 4.5              | 8.3              | 83%                  |
| 94-96                           | Walworth-Spring Prairie     | 1ct/ 1wy    | 0.7                       | 0.8                       | 14%                      | 2.5           | 1.8              | 2.0              | 14%                  |
| 94-96                           | Columbia-Springvale         | 2 cts/ 1 wy | 1.7                       | 1.7                       | 0%                       | 2.5           | 4.3              | 4.3              | 0%                   |
| 94-96                           | Dodge-Mayville              | 2 cts/ 1 wy | 1.2                       | 1.3                       | 8%                       | 2.5           | 3.0              | 3.3              | 8%                   |
| 94-96                           | Fond du Lac Washington      | 2 cts/ 1 wy | 3.2                       | N/A                       | N/A                      | 2.5           | 8.0              | N/A              | N/A                  |
| 96-98                           | Grant - Clifton Township    | 2 cts/ 1 wy | 3.8                       | N/A                       | N/A                      | 2.5           | 9.5              | N/A              | N/A                  |
| 96-98                           | Dodge-Beaver Dam1           | 2 cts/ 1 wy | 2.0                       | 1.1                       | -45%                     | 2.5           | 5.0              | 2.8              | -45%                 |
| 97-99                           | Iowa - Eastern              | 2 cts/ 1 wy | 2.7                       | 2.1                       | -22%                     | 3.9           | 10.5             | 8.2              | -22%                 |
| 97-99                           | Sheboygan Marsh             | 2 cts/ 1 wy | 2.4                       | 2.0                       | -17%                     | 2.5           | 6.0              | 5.0              | -17%                 |
| 97-99                           | Pepin/Dunn                  | 2 cts/ 1 wy | 2.6                       | 2.9                       | 12%                      | 2.5           | 6.5              | 7.3              | 12%                  |
| 97-99                           | Winnebago-Rat River         | 2 cts/ 2 wy | N/A                       | 2.6                       | N/A                      | 2.5           | N/A              | 6.5              | N/A                  |
| 00-02                           | Green Lake-Markesan F1      | 2 cts/ 1 wy | 3.8                       | 4.4                       | 16%                      | 2.5           | 9.5              | 11.0             | 16%                  |
| 00-02                           | Manitowoc-Centerville       | 2 cts/ 1 wy | 1.3                       | 1.1                       | -15%                     | 2.5           | 3.3              | 2.8              | -15%                 |
| 00-02                           | Eau Claire-Clear Creek      | 2 cts/ 1 wy | 4.8                       | 3.6                       | -25%                     | 2.5           | 12.0             | 9.0              | -25%                 |
| 00-02                           | Walworth-New Richmond       | 1ct/ 1 wy   | 0.6                       | 1.2                       | 100%                     | 2.5           | 1.5              | 3.0              | 100%                 |
| 00-02                           | Green Lake-Manchester       | 2 cts/ 2 wy | 4.6                       | 4.9                       | 7%                       | 2.5           | 11.5             | 12.3             | 7%                   |
| <b>Iowa F1 Mean</b>             |                             |             | <b>2.9</b>                | <b>2.5</b>                | <b>-14%</b>              |               | <b>8.7</b>       | <b>7.1</b>       | <b>-18%</b>          |
| <b><u>Jilin F1 Releases</u></b> |                             |             |                           |                           |                          |               |                  |                  |                      |
| 92-93                           | Dane-EDHRA                  | 2 cts/ 1 wy | N/A                       | 1.8                       | N/A                      | 2.5           | N/A              | 4.5              | N/A                  |
| 92-94                           | Dunn Co.-Muddy Creek W.A.   | 2 cts/ 1 wy | 3.9                       | 2.5                       | -36%                     | 2.5           | 9.8              | 6.3              | -36%                 |
| 92-94                           | Green Lake-Markesan         | 2 cts/ 1wy  | 4.8                       | 5.7                       | 19%                      | 2.5           | 12.0             | 14.3             | 19%                  |
| 92-94                           | Fond du Lac-Waupun          | 2 cts/ 1 wy | 3.6                       | 3.5                       | -3%                      | 2.5           | 9.0              | 8.8              | -3%                  |
| 92-94                           | Jefferson-Waterloo          | 1 ct/ 1 wy  | N/A                       | 2.5                       | N/A                      | 2.5           | N/A              | 6.3              | N/A                  |
| 93-95                           | Fredonia                    | 2 cts/ 1 wy | 2.3                       | 3.5                       | 52%                      | 2.5           | 5.8              | 8.8              | 52%                  |
| 93-95                           | Holland                     | 2 cts/ 1 wy | N/A                       | 3.3                       | N/A                      | 2.5           | N/A              | 8.3              | N/A                  |
| 95-97                           | Manitowoc-2 Rivers/2 Creeks | 2 cts/ 1 wy | 0.3                       | 0.4                       | 33%                      | 2.5           | 0.8              | 1.0              | 33%                  |
| <b>Jilin F1 Mean</b>            |                             |             | <b>3.0</b>                | <b>2.9</b>                | <b>-3%</b>               |               | <b>7.5</b>       | <b>7.3</b>       | <b>-3%</b>           |
| <b>State Mean</b>               |                             |             | <b>3.2</b>                | <b>2.9</b>                | <b>-10%</b>              |               | <b>8.4</b>       | <b>8.0</b>       | <b>-5%</b>           |



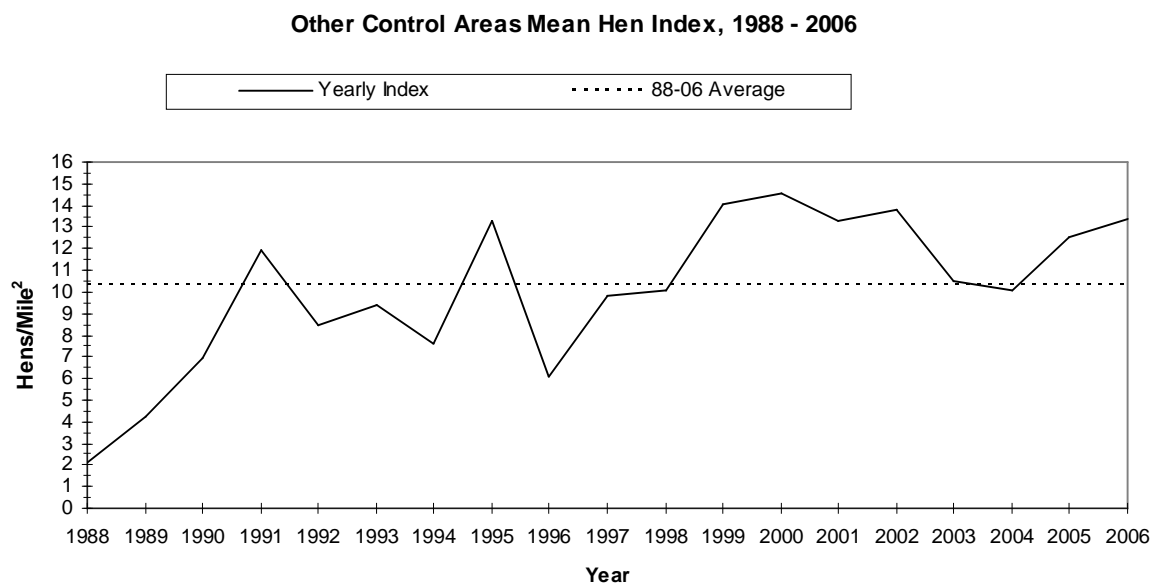
**Figure 1.** Mean pheasant hen indices (cocks heard/square mile x hens/cock) on study areas of the Dodge County Private Lands Project, 1984-2006



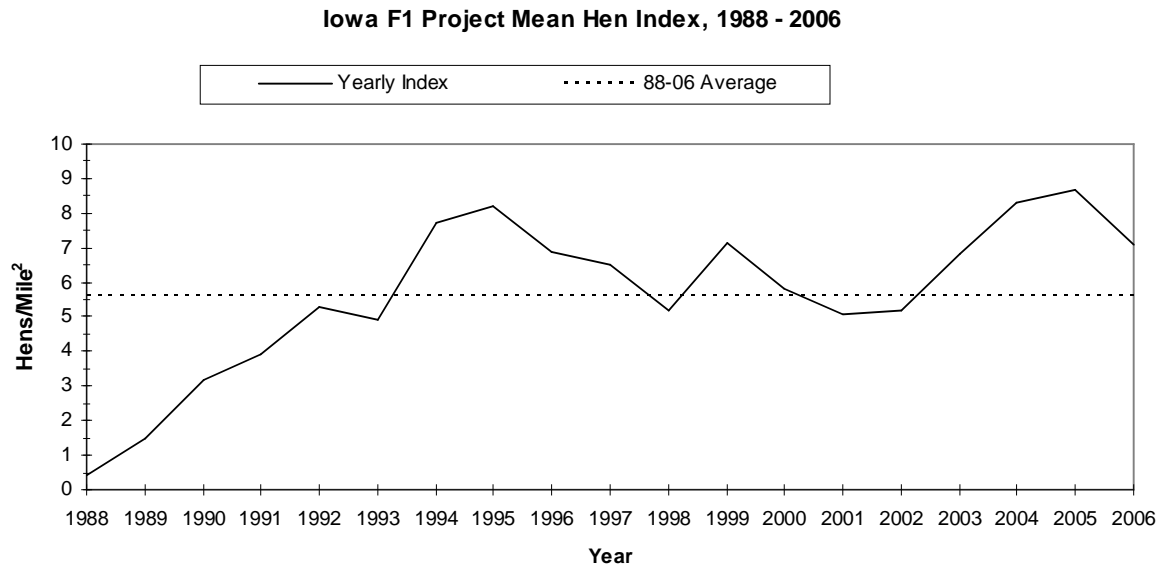
**Figure 2.** Pheasant hen indices (cocks heard/square mile x hens/cock) on the Glacial Habitat Restoration Area, 1991-2006



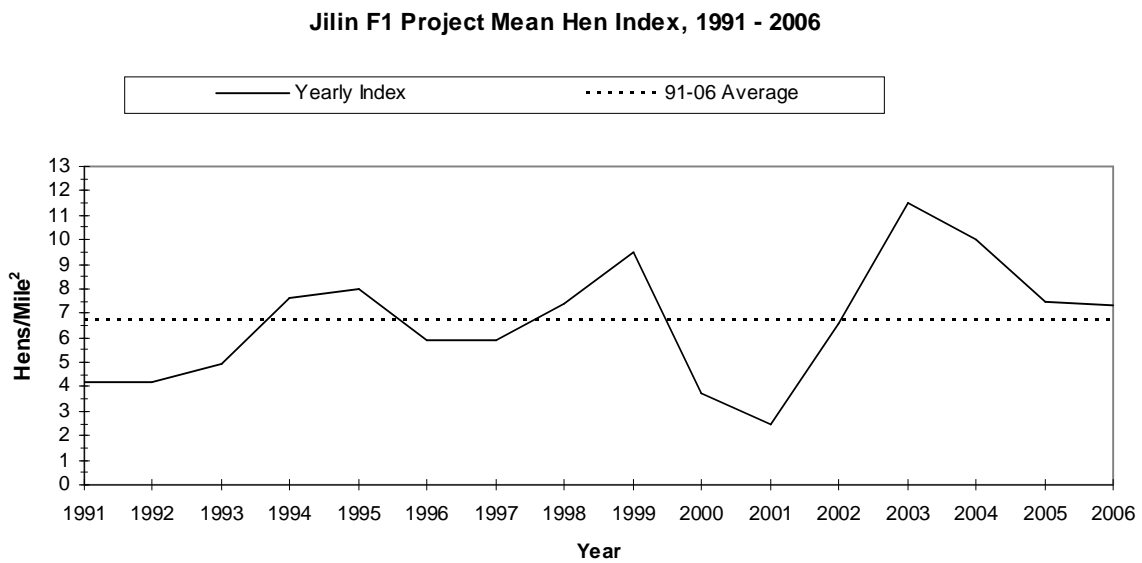
**Figure 3.** Mean pheasant hen indices (cocks heard/square mile x hens/cock) on GHRA control areas, 1991-2006



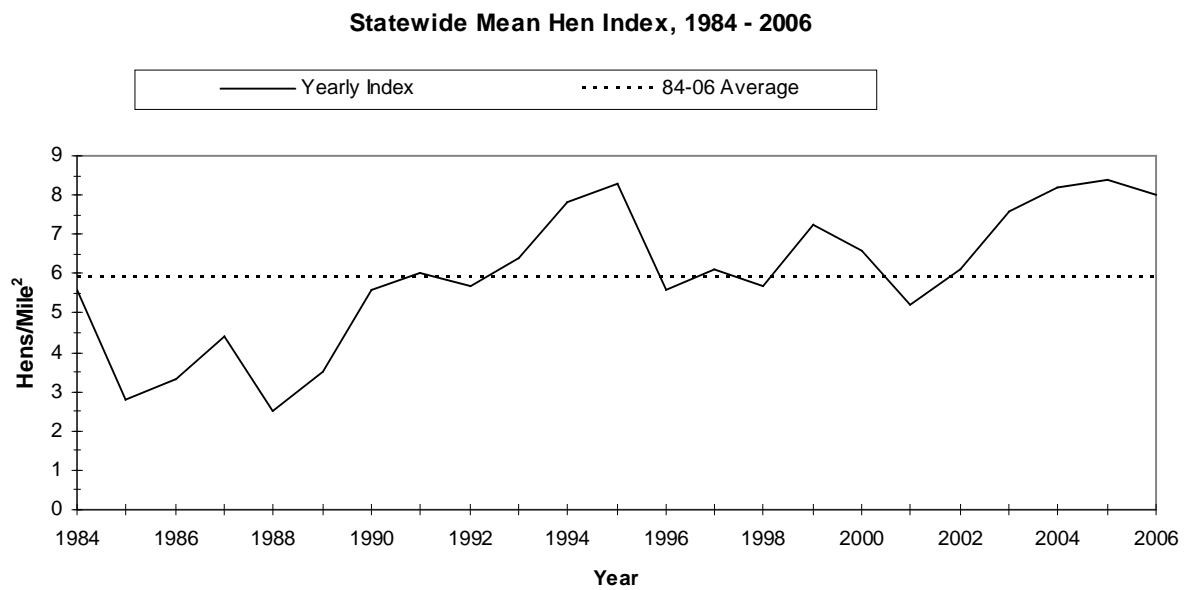
**Figure 4.** Mean pheasant hen indices (cocks heard/square mile x hens/cock) on control areas around Wisconsin, 1988 -2006



**Figure 5.** Mean pheasant hen indices (cocks heard/square mile x hens/cock) on Iowa F1 pheasant release sites, 1988 –2006



**Figure 6.** Mean pheasant hen indices (cocks heard/square mile x hens/cock) on Jilin F1 pheasant release sites, 1991-2006.



**Figure 7.** *Statewide pheasant hen indices (cocks heard/square mile x hens/cock), 1984-2006*